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Underlying motivational factors of farmers when acquiring arable land

- a study in the region of Östergötland, Sweden

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Underlying motivational factors of farmers when acquiring arable land
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Lantbrukares underliggande motivationsfaktorer vid investering i åkermark
- en studie i Östergötland, Sverige

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Abstract

The area of arable land is decreasing every year as a result of expanding cities or road networks, a fact affecting the farmers' business possibilities. The farms in Sweden are simultaneously getting fewer but larger in size, the higher survival rate among the larger farms indicating that growing means surviving. Furthermore, the price of arable land in Sweden has drastically increased over the past ten years, with Östergötland being one of the highest priced areas. However, recent literature regarding the acquisition of arable land discusses how theory focusing on monetary values fails to recognise farmers' behaviour and values. Instead, recent literature suggests that non-pecuniary attributes, along with economic factors, influence farmers' decision-making in different contexts.

The present study was designed to determine the underlying motivational factors of farmers when acquiring arable land. The study contributes to the field by deriving from existing literature, such as the net present value, hedonic pricing and behavioural aspects, and criticizing its inadequacy. By doing so, the present study aims to create a more holistic picture of the matter. The study is based on Means-End Chain theory (MEC), a framework for describing and linking peoples' values to their behaviour. The Zaltman Metaphor Elicitation Technique (ZMET) was used, a qualitative method previously never applied in this context, providing a new perspective and generating a unique result. The method enabled the farmers themselves to control what aspects were highlighted during the interviews and forced them deeper into their reasoning process. The cause-effect relationships between elements elicited were then coded and illustrated in a Hierarchal Value Map (HVM), constituting the result of present study.

The main findings indicate how farmers' underlying motivational factors cannot be characterized as either financial or non-financial when acquiring arable land. Rather, financial and non-financial factors are in this context closely linked. The most prominent value pronounced during the interviews was "Profitability", closely followed by "Happiness" and "Well-being". The interviewed farmers acquired the arable land essentially based on location, to increase farm size and to enable continued operation. These attributes were found to increased revenue and improve efficiency as well as the work situation. Using ZMET in the study was considered vital to assess the respondents' reasoning processes and thereby the in-depth information governing the result. To conclude, the result of the present study shows that there is a complex set of factors that motivates farmers in their decision to acquire arable land.

Sammanfattning

Varje år minskar åkermarksarealen till följd av att städer och vägnät utvidgas, något som påverkar lantbrukares affärsmöjligheter. Samtidigt blir antalet lantbruksföretag i Sverige färre men större i storlek vilket visar på en tydlig överlevnadstrend bland större företag som indikerar att företag som växer är de som överlever. Åkermarkspriset har drastiskt ökat i Sverige under de senaste tio åren, med Östergötland som ett av de områdena med högst priser för åkermark. När lantbruksföretag investerar i ytterligare åkermark krävs en ökad lönsamhet för att klara de höga lån och räntekostnader som följer med investeringen, detta samtidigt som priserna för jordbruksråvaror minskar. Aktuell litteratur inom området föreslår att teorier som utgår från monetära värden misslyckas med att belysa lantbrukares beslutsfattande vid investeringar. Istället föreslås att ideella attribut, tillsammans med monetära värden, påverkar lantbrukares beslutsfattande.

Denna studie utformades för att identifiera lantbrukares underliggande motivationsfaktorer vid investering i åkermark. Studien bidrar till forskningen genom att utgå från existerande litteratur beträffande nettonuvärdesberäkning, hedonisk prissättning och beteendevetenskap och kritisera den för dess otillräcklighet inom ämnet. Genom detta bidrar denna studie till att skapa en mer holistisk bild av ämnet. Vidare utgår studien från Means-End Chain (MEC) teorin, ett ramverk för att beskriva och länka samman människors värden och beteenden. Den kvalitativa metoden Zaltman Metaphor Elicitation Technique (ZMET) som vidare tillämpades har tidigare inte använts i denna kontext. Detta medför att studien bidrar med ett nytt perspektiv och genom det ett unikt resultat. Metoden möjliggjorde vidare att lantbrukarna styrde samtalet under intervjun och själva fick belysa vilka aspekter som var viktiga för dem. De identifierade elementen från intervjuerna kodades sedan och illustrerades i en hierarkisk värdekarta (HVM) som följaktligen utgör studiens resultat.

Studiens resultat indikerar att underliggande motivationsfaktorer hos lantbrukare inte kan kategoriseras som antingen monetära eller icke-monetära, eftersom de är tätt sammankopplade. Det mest framträdande värdet som nämndes under intervjuerna var “Lönsamhet”, följt av värdena “Lycka” och “Välbefinnande”. De intervjuade lantbrukarna valde framförallt att investera i ytterligare åkermark baserat på dess läge, fortsatt tillväxt och för att fortsatt kunna bedriva verksamheten - förknippat med ökade intäkter och effektivitet såväl som en förbättrad arbetssituation. Användandet av ZMET anses ha varit avgörande för studiens resultat eftersom metoden tillgängliggjorde en ökad förståelse för respondenternas resonemang och genom det en unik, djupgående information i frågan. Sammanfattningsvis tyder resultaten från studien på att det finns en komplex uppsättning av faktorer som påverkar och motiverar lantbrukare vid deras beslut att investera i åkermark.

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1 Introduction

This first chapter presents the problem background followed by a problem statement and a presentation of the study's aim and research question. The introductory chapter also presents delimitations and contributions of the study.

1.1 Background

There is approximately 2.6 million hectares of arable land in Sweden today, an area that is decreasing every year (www, Jordbruksverket 2018a). High quality land is transformed from agricultural land to being part of expanding cities or road networks and lost forever as arable land (ibid.). Hence, the arable land is subject to a constant pressure in terms of decreasing area, affecting the farmers in their possibilities to conduct business.

Regarding the structure of the agricultural businesses, the number of farms in Sweden has halved since 1970 and the trend is them keeping declining in numbers but growing larger in size (www, Jordbruksverket 2017). In developed countries, like Sweden, the large size of the farms is associated with lower production costs per unit through economies of scale (Ekman & Gullstrand 2006). The survival rate is statistically proven to be higher among these larger farms which indicates that growing means surviving (ibid.). To grow, to expand in terms of area, the farmers need to invest in arable land – a limited and geographically bound resource. During 2018, almost 1900 acquisitions of arable land were performed (www, Swedish Board of Agriculture 2019). Of these, one out of ten offered an area larger than 11 hectares. Estates with more than 50 hectares of arable land have only been sold 3-10 times a year since 2009 (ibid.). The geographic location of the arable land is highly important; managing land far away from the farming center means a significant increase in costs (Edenbrandt 2012). Therefore, most farmers only choose to expand when a landowner nearby wants to sell (ibid.).

Since the new millennium, there has been a steady and considerable increase in price of arable land all over the world (www, Savills 2018). In Sweden, the average price of arable land increased with 87 % the past 10 years (www, Swedish Board of Agriculture 2019). How the price developed is illustrated in Figure 1.

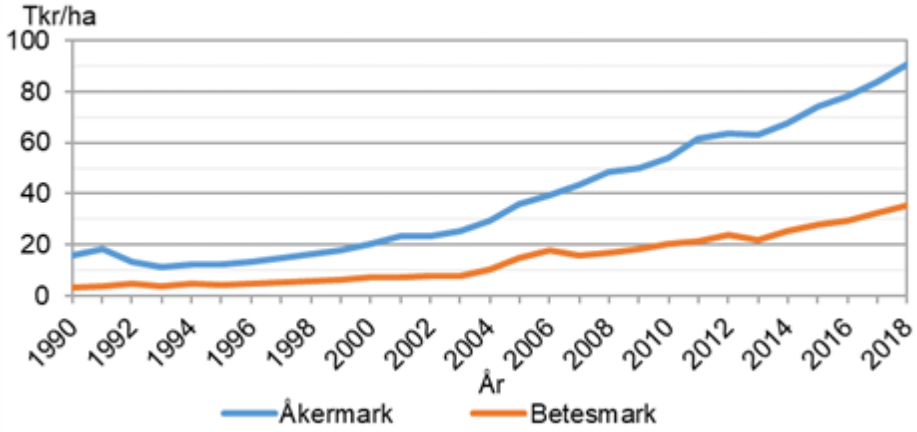

Figure 1. Price development for arable land (blue line, "Åkermark") and pasture (red line, "Betesmark") in Sweden, thousand Swedish Krona per hectare, 1990-2018 (www, Jordbruksverket, 2018b:1).

The average price of arable land in 2018 in Sweden was 90 700 Swedish Krona (SEK) per hectare (www, Swedish Board of Agriculture 2019). The highest priced area was in the plain districts of Götaland, an area including Östergötland, with an average price of 216 200 SEK per hectare. This corresponds to 13 times the price for arable land in the northern parts of Sweden and almost 2.5 times the average price in the country (ibid.). If investing in arable land requires external financing, profitability is what allows farmers to do their interest rate payments and pay down their debt (Bierlen & Featherstone 1998). The accelerated prices on arable land can be problematic since higher prices means higher debts and higher interest payments (Bierlen & Featherstone 1998), requiring a higher profitability. In contrast to the development of land prices, the price on wheat declined about 6 % and the average price on production factors increased with 10 % between 2015-2019 (www, Jordbruksverket 2020). OECD/FAO (2019) foresees a continued price decline by around 1-2 % per year for most commodities the following decade, which will lower the income for farmers who do not successfully improve productivity or lower costs enough.

As mentioned above; farm size development, availability of land for sale and economic aspects are all factors affecting the decision of whether to acquire arable land or not. Although, there are many other factors involved. For example, maximization of profit is not the only driver of the behaviour of farmers (Willock et al. 1999). Altogether, these factors form a complex background of the farmers' underlying motivational factors when acquiring arable land.

1.2 Problem Statement

Farmland is an important part of the agricultural business; up to 80 % of the total value of all farm assets is found in the arable land, an asset that stands for the primary collateral in production loans (Nickerson et al. 2012). Economic theory proposes that the value of agricultural land is set by the discounted stream of expected returns (Borchers, Ifft & Kuethe 2014). An investment is according to investment theory based on the expected return that the investment will generate (Gaspars-Wieloch 2019). Traditionally, the method of Net Present Value, the present value of expected net returns from the investment, is used to calculate investments (Forster 2006). However, recent literature suggests that economic theory fails to account for how farmers are not only driven by the maximization of profit, but instead of a complex set of different factors (Willock et al. 1999; Borchers, Ifft & Kuethe 2014; Howley, Dillon & Hennessy 2014; Howley et al. 2015). As prices for farmland have increased considerably over the last decade, the market value of the land has exceeded its value of agricultural use (Barnard 2000; Flanders, White & Escalante 2004). Research shows that the value of farmland reflects other sources of return in addition to its agricultural production, such as the potential development to urban land use activities (Plantinga, Lubowski & Stavins 2002; Livanis et al. 2006). However, Willock et al. (1999) discuss how theory focusing on monetary values fails to recognise farmers´ behaviour and values. Since the market value of arable land exceeds the value of agricultural use, it is important to identify what factors influence the market value (Barnard 2000; Flanders, White & Escalante 2004). By understanding farmers´ decision-making process behind an acquisition, an increased knowledge of the market as well as the agricultural businesses that proceed with acquisitions can be obtained.

Howley et al. (2015) examined what role the underlying farming motivations play in the decision-making of converting land to alternative uses, such as forestry. The authors found that economic incentives alone are unlikely to inspire farmers to make land conversions and stressed an increase of understanding different farming motivations to be required (ibid.). Howley, Dillon and Hennesy (2014) examined how farmers allocate their labor and found that farmers' production decisions are not simply motivated by profit. There are non-monetary benefits which are highly valued by farmers, influencing their decision-making (ibid.). However, the literature regarding acquisitions of arable land from the perspective of non-financial aspects is restricted and further research is required. The authors of the present study argue the importance of understanding why farmers decide to acquire arable land in areas with remarkably high prices. Also, the value of identifying which motivational factors that are affecting farmers' decision-making process. This to receive a more holistic picture of the phenomenon to, for example, develop economic models to accord with the studied reality. Borchers, Ifft and Kuethes (2014) found that farmland values cannot fully be explained by agricultural returns. The value is instead based on several attributes, agricultural returns being one of them (ibid.). Considering this disagreement, it is of high value to identify these other attributes, these underlying factors, which alongside monetary aspects influence both the value of the land and the farmers' decisions. Understanding the motivational factors that influence a farmer´s decision to acquire arable land is essential for all stakeholders, among these policymakers. Today, economic models used for the development of programs regarding policies or subsidies, for example CAP, are often based on the assumption of farmers solely being motivated by profit maximization (Gibbard & Varian 1978; Heinmiller 2007; Garforth 2010). Since there are other motivational factors, economic models tend to become misleading and poorly adapted to farmers. Furthermore, financial institutions' knowledge of that not only monetary values affect acquisitions of arable land is vital when doing business with farmers in order to understand their decision-making. Therefore, a contribution towards an increased understanding of why farmers acquire arable land in areas with remarkably high prices is needed.

1.3 Aim and delimitations

The aim of this study is to identify farmers' underlying motivational factors when acquiring arable land. The aim is furthermore to explore why these acquisitions occur in areas with remarkably high prices per hectare. To suffice our aim, we endeavour to answer the following research question.

What are the underlying motivational factors when farmers acquire arable land in areas with remarkably high prices per hectare?

The existing literature focus on farmers' acquisition of arable land from a monetary perspective. At the same time, the predicament of this perspective has been raised by several authors claiming the need to shift focus towards a cluster of factors, including non-monetary factors (Willock et al. 1999; Borchers, Ifft & Kuethe 2014; Howley et al. 2014; Howley, Dillon & Hennesy 2014). Howley, Dillon & Hennesy (2014) suggest that non-pecuniary attributes, along with economic variables, influence farmers' decision-making in different contexts. Therefore, the authors of this study argue the potential of contributing to the research by unrestrictedly focusing on farmers' underlying motivational factors in the context

of acquiring arable land. This to allow all potential aspects of farmers' decision-making to form a base for future research. By doing so, research of famers' decision-making when acquiring arable land can be based on a more holistic view of the subject.

The study is based on interviews of farmers in the county of Östergötland, one of the highest priced area for arable land in Sweden with 2.5 the average price in the country, located in Götaland (www, Swedish Board of Agriculture 2019). Capturing remarkably high-priced acquisitions aims to detect motivations of non-monetary character to a larger extent. A qualitative method using the Zaltman Metaphor Elicitation Technique (ZMET) was therefore applied since it is particularly beneficial in eliciting and mapping motivations behind an involvement. The nine interviewed farmers were chosen after the criteria of already owning land and being active farmers in Östergötland that acquired arable land the past four years.

Arable land is defined as regularly worked land, ploughed or tilled, under a system of crop rotation in accordance with Eurostat, the statistical office of the European Union (www, Eurostat 2018). The acquisition of arable land as two parties, a seller and a buying farmer, agreeing upon a price for an area of arable land under free trade (ibid.).

1.4 Contribution

The present study is relevant regarding both time and topic since the price of arable land has increased considerably the last couple of years, with no exceptions for Sweden. It is of high value to identify and understand farmers' underlying motivational factors when acquiring arable land to deepen the understanding of farmers' behaviour concerning investments of this character. By doing so, this study can be of use when developing existing and future economic models regarding both financial and behavioural factors. Howley, Dillon and Hennesy (2014) state that it would be useful for future research to integrate non-financial factors in economic models of farmers' behaviour. The present study is to the authors' knowledge the first comprehensive investigation that accounts for financial and behavioural aspects equally within this field of research. Hence, it contributes to existing knowledge of the issue by providing a more holistic picture of the matter. Applying the ZMET in this context contributes to the literature regarding the method's previous sparing usage within this field of research - no other study that examines the acquisition of arable land using this method was found. Furthermore, if the result generated is used when developing already existing or new economic models, policies within the agricultural sector can be developed and customized to better fit the farmers' situations and behaviour. In addition, this study is argued to be of importance for financial institutions and other actors who conduct business with agricultural firms. Since previous literature mainly analyses financial or behavioural aspects of the phenomenon, this study may help bridge this gap. By doing so, it is of potential to provide the financial institutions with a better and more correct picture of the reality by increasing their awareness of financial and non-financial factors influencing farmers' decisions. Also, based on these perspectives, the present study works as an exploratory tool for future research; the results are of interest for both qualitative and quantitative research. Finally, this study is important for farmers themselves by providing rich insights of the acquisition of arable land and what might influence fellow farmers in their investment decisions. Also, by its potential

of providing policy makers and financial institutions with a better adopted picture of the issue – both important agents with the power to affect the reality and daily work of active farmers.

2 Conceptual Framework

This chapter aims to project a brief review of selected literature and its findings within the research area of acquiring arable land. The literature selected concerns both financial and behavioural aspects of the matter. After the literature review, the Means-End Chain theory is presented.

2.1 Literature Review

This section provides existing literature related to both financial and behavioural aspects of the acquisition of arable land relevant for this study. Since acquiring arable land requires a significant amount of capital, the investment literature is of great interest. Researchers have also analysed how behavioural models influence farmers' behaviour and decision-making, a literature that is also regarded in the framework of this study. The two parts of this section aims to give the reader a better understanding of previously examined aspects affecting farmers to acquire arable land.

2.1.1 Financial aspects of acquiring arable land

There is a considerable amount of research regarding the financial aspects of acquiring arable land, one of the most critical assets for a farmer (Boehlje et al. 2011). Since arable land is categorized as a capital asset, the intention of the buyer is to attain higher earnings from the land than what was paid for it when purchased (ibid.). Hence, the price is one important aspect. Boehlje et al. (2011) established that the price for arable land is shaped by its value. Many researchers refer to the net present value (NPV) as one of the most obvious ways of valuating a potential investment and, hence, as an important determinant for the value of arable land (e.g. Turvey 2002; Goodwin, Mishra & Ortalo-Magne 2003; Forster 2006; Devadoss & Manchu 2007; Arnaboldi, Azzone & Giorgino 2015). NPV is defined as "*the sum of the present values of incoming (benefits) and outgoing (costs) cash flows over a period of time*" (Gaspars-Wieloch 2019:181). Benefits can be derived from agricultural operation or renting the land to someone else (Sherrick 2018). Another benefit, generally greater than the cash flow generated from the agricultural operation, is the possible capital gain realized when the arable land is being sold (Kletke & Plaxico 1979; Boehlje et al. 2011). Hence, when a farmer acquires arable land, both benefits derived from the daily operation as well as the opportunity of future capital gains when selling the land are being considered. However, anticipating the future value of the land is referred to as difficult since it can take many years until the buyer knows whether the invested capital's development was of profitable character or not (Boehlje et al. 2011). Historically, the capital gain generated from arable land has thus been beneficial in comparison to other investments of equivalent risk conditions (ibid.). The possible value-growth is connected to the farmer's credit availability, the net wealth of the farmer (Schmitz & Shalit 1982). If the value for arable land increase, so does the equity base offered in the growing gap between what the land was bought for and current market price – enabling additional borrowing and thereby further expansion possibilities (Kletke & Plaxico 1979). In accordance, Schmitz and Shalit (1982) argue that arable land is bought to increase both farm profit and its leverage in future growth. Regarding the costs, the outgoing flows, observed in the NPV; since buying arable land often comes with obtaining a loan, many

researchers point out the importance of the interest rate payments (Schmitz & Shalit 1982; Gertel 1990; Moss 1997; Devadoss & Manchu 2007). The higher the interest rate, the higher the cost becomes for the farmer. Sherrick (2018) stresses that a rational farmer never lends capital if the interest rate payments required exceed the expected returns from the land acquired. The interest rate payments also include the returns paid to the farmer, who individually decides upon the rate of returns required to be generated from the investment (Gaspars-Wieloch 2019). Another cost is connected to the taxes. How capital gains, properties and income are taxed will affect the level of costs connected to the acquisition of arable land (Devadoss & Manchu 2007). Since a wedge between the NPV and actual arable land prices has been observed, the NPV does not hold the unanimous answer to arable land value (Turvey 2002). Already in 1982, Schmitz and Shalit found that the deviation between farm profit and the value of the land was growing. Thus, research on other factors affecting the value of and the decision to acquire arable land is of interest to this study.

The hedonic pricing method, a preference valuation method that has often been used for environmental and natural resources such as arable land, accounts for some of these factors (Ma & Swinton 2012). The benefit of the method is found in its ability of seeing to the utility generated by specific and underlying characteristics (ibid.). Utility generated by arable land varies greatly depending on what plot, what specific piece of land, is examined since the underlying characteristics is very different between plots (Maddison 2000). By seeing to the combination of attributes offered by the parcel, the observed problem of non-homogeneity can be reduced (Clifton, Elad & Epperson 1994). Balmann et al. (2013) account for four groups of characteristics that often returns in hedonic valuation: productivity, neighbourhood, location and environmental characteristics. In almost all empirical studies regarding the hedonic valuation of arable land, soil quality and number of hectares for sale is referred to as important characteristics (e.g. Maddison 2000; Forster 2006; Ma & Swinton 2012; Nickerson et al. 2012; Balmann et al. 2013; Westergard 2015). Market attributes such as the number of properties for sale at the present time and government policies also affect the value (Clifton, Elad & Epperson 1994). The locational aspect captures that arable land is of fixed quantity and the market for it is localized and limited, that it cannot be traded like many other economic goods (ibid.). If the buyer is a resident, the realized price tends to be higher (Balmann et al. 2013). The hedonic pricing also takes environmental amenities into account (Bastian et al. 2002). Environmental amenities capture the fact that arable land is more than just production; it is also a home for people (Ma & Swinton 2012). This is considered in the present study since it is of potential to affect the decision to acquire. Lakes offering scenic views, swimming, and boating as well as forested areas offering room for recreation are important environmental amenities (ibid.). Significant value increasing characteristics within environmental amenities include sport fishery, scenic view diversity, hunting opportunities, distance to town, wildlife habitat, outdoor recreation, and open space (Bastian et al. 2002). Altogether, previously mentioned factors build up the valuation based on the individual farmer's preferences. Since the hedonic valuation is based on valuating the preferences monetarily, the main contribution from this area of research to this study will be the provided insights of what is considered being important characteristics. The hedonic valuation, hence, capture other underlying motivational factors of farmers when acquiring arable land than profit maximisation as presented in the NPV. These motivations are also mentioned within behavioural literature, a closely related field of research.

2.1.2 Behavioural aspects of acquiring arable land

Gasson (1973) states that financial literature generally tends to focus on profit maximization. Furthermore, no decisions are strictly financial or non-financial, just more or less rational from an economic point of view. The amount of literature suggesting that economic models fail to account for farmers' motivational factors, besides profit maximisation, has increased over the last couple of years (Gasson 1973; Willock et al. 1999; Key 2005; Key & Roberts 2009; Garforth 2010: Ferguson & Hansson 2013; Howley, Dillon & Hennesy 2014; Howley et al. 2015; Hansson, Manevska-Tasevska & Asmild 2018).

Gasson (1973) states that investment theory, which claims that farmers are rational and profit maximizing, does not consider the personality of the farmer. Furthermore, both financial and non-financial factors act as determinants for farmers and their behaviour, which affect their decision-making (Willock et al. 1999; Howley, Dillon & Hennesy 2014; Howley et al. 2015). Garforth (2010) states how it is extensively accepted that farmers' motivational factors for continuing with their lifestyle are not solely economic or financial. For example, farm work is often associated with nonpecuniary benefits by being a more rewarding job in the aspects of lifestyle and quality of life (Howley et al. 2015). Other nonpecuniary benefits of farm work are independency and pride which are reasons for why farming is chosen over other types of employment (Key 2005; Key & Roberts 2009; Howley et al. 2015). Moreover, farmers might endeavour to assure an income rather than to maximize it (Gasson 1973). Goals regarding nonpecuniary benefits might therefore be as, or even more, important as goals of profit maximization (Gasson 1973; Duesberg, O'Connor and Dhubháin 2013; Howley, Dillon & Hennesy 2014). Since farmers are not a homogenous group, there is a distinct range of financial and non-financial factors that influence and motivates farmers (Howley et al. 2015). To conclude, there is a complex balance of factors, such as pride, identity, and independence as well as financial factors that are associated with farming and motivates to a farming lifestyle (Key 2005; Key & Roberts 2009; Howley, Dillon & Hennesy 2014; Howley et al. 2015).

There are several motivational factors of farmers that have been enlightened in recent research where, as aforementioned, the lifestyle related to farming is highly valued (Howley et al. 2015). Gasson (1973) and Willock et al. (1999) found that if the farming lifestyle is highly valued, the farmer wants to preserve the land and make room for future generations. Burton (2004) stated that farmland is what allows the expression of a farming lifestyle, and therefore fundamental for both the business and the identity of the farmer. The farmer's identity is associated with the historical and future identity of their families (ibid.). Dessein and Nevens (2007) found that being part of a tradition is related to the endeavours of being a farmer, described as being part of something larger that goes beyond the own farm and generation. Furthermore, being part of a farming community adds to the concept of being part of a tradition (Burton 2004; Dessein & Nevens 2007). In addition, goals and values are motivational factors which affect farmers and their decision-making. Goals are desired ends or states in which an individual wish to be in or achieve (Gasson 1973). According to Gasson (1973), goals can be the reason for why farmers invest in additional arable land. The goals might regard the desire to own land, increase the capital value of the holding, or to expand the business to enable the same lifestyle for future generations. In other words, owning more land can be an end in itself, or just part of a more distant end such as profit maximization or

convenience (ibid.). Goals are influenced by values, which are less inclined to change over time or circumstances (Gasson 1973; Duesberg, O'Connor & Dhubháin 2013). There are several values which influence farmers' goals and behaviour, showing that farmers display complex and sometimes contradictory values in relation to farming (Gasson 1973; Parminter & Perkins 1997; Garforth 2010; Duesberg, O'Connor & Dhubháin 2013).

With consideration to both financial and behavioural aspects of acquiring arable land, this study aims to provide a deeper understanding of the research matter. Departing from the NPV, adding the knowledge of hedonic pricing and, lastly, connecting behavioural aspects – the complexity of the research background is formed and understood. These literary approaches to the matter are closely linked but often applied separately since found under different literature. For example, hedonic pricing and behavioural literature are both based upon the idea that motivations are more complex and include more than profit maximation alone. Deriving from these different approaches, this study aims to add a more holistic view to this field of research positioned at the interface of the financial and behavioural literature, as illustrated in Figure 2.

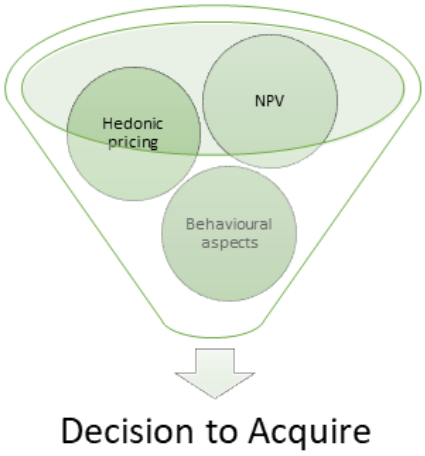

Figure 2. The literary approach of this study: consider findings within NPV, hedonic pricing and behavioural literature to understand farmers' underlying motivations when acquiring arable land (Own work).

2.2 Theoretical Framework

In this section, the key theory Means-End Chain (MEC) is closely described. The MEC theory, together with Zaltman Metaphor Elicitation Technique (ZMET), is used to form the results of this study. The MEC theory constitutes a relevant framework for the present study by its allowance of mapping important aspects of farmers' acquisition of arable land.

The Means-End Chain (MEC) theory is a framework for describing consumer behaviour based on attributes linked to a certain product (Gutman 1982; Reynolds & Gutman 1988; Botschen, Thelen & Pieters 1999; Reynolds & Olson 2001; Leppard, Russell & Cox 2004; Hansson & Kokko 2018). *Means* are activities in which people participate and *Ends* are states of being or values, such as security, happiness, or, accomplishment (Gutman 1982). A MEC

model is used to link values to behaviour by explaining how the selection of a product ease the achievement of aspired end states (ibid.). The MEC approach states that peoples' behaviour is based upon attributes connected to a product (Gutman 1982; Reynolds & Gutman 1988). These attributes are correlated with consequences, which lead to desired end-states or values (Gutman 1982; Reynolds & Gutman 1988). Values are what people find to be important (Bardi & Schwartz 2003). According to Gutman (1982), consequences are defined as direct or indirect results of a person's behaviour. Direct consequences are derived from a person's behaviour whereas indirect consequences can occur as direct consequences from other consequences (Gutman 1982). To summarize, the essential feature of the MEC model is that people choose actions that produce wanted consequences and try to avoid undesired consequences (ibid.).

The MEC approach emerged within the consumer research, focusing on consumption behaviour (Gutman 1982; Reynolds & Gutman 1988). However, the MEC model has been used in contexts related to the present study's, see for example Dickson and Magnusson (2013), Hansson and Lagerkvist (2015), Jonsson and Sandlund (2017), Hansson and Kokko (2018), and Löfgren and Olsson (2019). Since the MEC approach identifies a hierarchy from attributes, to consequences, to values, it illustrates a representation of values that affect decision-making (Gutman 1982; Reynolds & Gutman 1988; Botschen, Thelen & Pieters 1999). By doing so, the approach is justified in other contexts than consumer behaviour and therefore also in the present study (Hansson & Kokko 2018). The MEC approach was used in this study to identify and examine farmers' hierarchical links between the attributes, consequences, and values they ascribed to acquiring arable land.

The connections between attributes and values are often illustrated in ladders, which are a result from laddering interviews (Gutman & Reynolds 1988). Furthermore, the results from laddering interviews are presented in hierarchical value maps (HVM) (Leppard, Russell & Cox 2004), as in the present study. These maps provide an understanding of the drivers behind peoples' choices by displaying a group's linkages between attributes, consequences, and values (ibid.). By combining these linkages, it is likely to identify patterns related to the decision (Gengler, Klenosky & Mulvey 1995).

The MEC approach can, according to Veludo-de-Oliveira, Ikeda and Campomar (2006), be applied to a range of qualitative research projects and not only consumer research, see for example Dickson and Magnusson (2013), Hansson and Lagerkvist (2015), Jonsson and Sandlund (2017), Hansson and Kokko (2018), and Löfgren and Olsson (2019). Hansson and Lagerkvist (2015) used the MEC approach to identify the underlying values that affect dairy farmers' decision-making. Hansson and Kokko (2018) used the MEC approach to understand farmers' behaviour and decision-making. With reference to previous literature, the MEC approach is considered appropriate for the present study. The benefit of the MEC theory applied in this context can be found in its ability of regarding both financial and behavioural aspects, both important for farmers when acquiring arable land. The MEC theory enables the identification of attributes, consequences, and values of the respondents in the present study, identifying their underlying motivational factors.

3 Method

This chapter presents the method and study design used to reach the aim of the present study. Furthermore, it accounts for ethical principles and considerations and how they are considered in this study.

3.1 Choice of approach

3.1.1 Qualitative approach

The present study used a qualitative approach as appropriate when the endeavour is to provide expressive details and to understand a specific situation or setting (Patton 2002; Frankfort-Nachmias & Nachmias 2004; Bryman & Bell 2015). Since the present study aims to identify underlying motivational factors of farmers when acquiring arable land, there is a desire to collect rich details from a rather specific situation. By choosing a qualitative approach, a case study can be conducted which is useful to understand individuals' actions and behaviour (Bryman & Bell 2015). Research with a qualitative approach aims to understand behaviour by familiarizing people and their values (Frankfort-Nachmias & Nachmias 2004). Therefore, a qualitative approach is preferred in the context of this study. In addition, the present study aims to explain the respondents' observed behaviour and decision-making. A qualitative approach is, hence, adopted since it enables the researchers to receive vivid details about a phenomenon (Patton 2002; Frankfort-Nachmias & Nachmias 2004; Bryman & Bell 2015). The collection of data in the present study was conducted through conversations with farmers, namely by interviews following The Zaltman Metaphor Elicitation Technique (ZMET) (Coulter & Zaltman 1995; Zaltman 1997). The strength of this technique is its ability of capturing often missed insights, for example emotions and nonverbal communication, by showing attention towards them (Zaltman 1997). The technique is based on pictures, which allows a more direct link to how thoughts occurred in the interviewed persons' thoughts, outlining the most feasible and correct information (ibid.). Furthermore, pictures have proven to be effective in revealing hidden thoughts (Coulter & Zaltman 1995). ZMET enables the researchers of the present study to follow the respondents' reasoning and elicit deeper information than just the first thoughts that occurred of the matter. With qualitative interviews, researchers attain rich details and can form a deeper understanding of social processes (Frankfort-Nachmias & Nachmisa 2004; Qu & Dumay 2011; Bryman & Bell 2015). Therefore, qualitative interviews using ZMET are appropriate for this study since it enables the researchers to identify and map a person's motivations of a certain activity (Coulter & Zaltman 1995; Zaltman 1997; Christensen & Olson 2002).

3.1.2 Problems and considerations with a qualitative approach

Qualitative research is criticised for being subjective and interpretive, where the researchers might affect the results of the study (Bryman & Bell 2015). Hence, the authors of this study have considered this aspect throughout the study. A qualitative approach is criticised due to the effect researchers might have on the people being studied (Frankfort-Nachmias &

Nachmias 2004; Bryman & Bell 2015). Frankfort-Nachmias and Nachmias (2004) discuss how researchers often have more power than the respondents, which might affect how respondents act since they want to boost their social prestige. With consideration to the important role researchers play in collecting data, they must act responsible in the entire research process and understand how they might affect the respondents (Frankfort-Nachmias & Nachmias 2004; Bryman & Bell 2015). Since the researcher is the main instrument for collecting data, there must be a systematic approach to handle the collected data to establish objectivity and trustworthiness (Bryman & Bell 2015). Establishing criteria for how the collected data should be handled must imbue the entire process of collecting data; reading, organizing, analysing, reflecting, coding, categorizing, generalizing and validating (ibid.). To ensure that the researchers of this study have not subjectively analysed the result from the study and to keep the study transparent, see Appendix 1 for the coding table and Appendix 2 for the complete data set. The researchers have been aware of the challenges with a qualitative study and have acted in consideration of them. A qualitative approach means that the results cannot be statistically generalised, since the data is not statistically valid from a point regarding the number and selections of respondents (Golafshani 2003). Therefore, conclusions about an entire population cannot be made within this study. Frankfort-Nachmias and Nachmias (2004) discuss how, despite aforementioned concerns, a qualitative research yields rich details and characterization of cultures and phenomena, which cannot be obtained through a quantitative research. When there is little or no information about a group or phenomena, a qualitative research can act as an exploratory tool in the development of quantitative evaluations (ibid.). Since the present study aims to identify the underlying motivational factors of farmers' investments in arable land, it is appropriate to use a qualitative approach to identify these factors. The present study wishes to seek deeper knowledge about farmers' behaviour and decision-making when investing in additional arable land by combining several important aspects of an investment. Previous literature has analysed this specific phenomenon from either the perspective of investment theory or the perspective of behavioural models. The present study works as an exploratory tool for future research of both qualitative and quantitative approaches since it derives from both investment theory and behavioural models. To conclude, a qualitative approach is appropriate for this study to give more details about this specific phenomenon.

3.1.3 Deductive process

The present study followed a deductive process to fulfil its aim. A deductive process begins with an idea or a research object, through which the research question is formulated followed by collection of data in the form of relevant literature (Svensson 2009). The collection of literature is followed by an empirical collection, implications are formed and, finally, conclusions are drawn (ibid.). Using a deductive approach, researchers try existing literature and theories about a phenomenon against the study's collected data (Graneheim, Lindgren & Lundman 2017). By doing so, researchers move from theory to data or, from an abstract and general to a more concrete and specific level (ibid.). The present study derives from existing literature, such as investment theory and the behaviour and decision-making of farmers and aims to enrich existing literature by adopting a critical perspective of today's scientific reality. The study´s collected data can serve as a starting point in developing the literature. Hence, the study must depart from existing literature of farmers' decision-making when investing to, eventually, identify the underlying motivational factors of farmers. However, a deductive

approach comes with challenges and there can, for example, be left-over data that does not fit the selected explanatory model or chosen theory (Graneheim, Lindgren & Lundman 2017). Depending on the purpose of the selected explanatory model, left-over data can be either ambiguous or important contributions (ibid.). Left-over data will be important contributions if the purpose is to develop an explanatory model. Although, if the purpose is instead to verify an explanatory model, left-over data is ambiguous (ibid.). For the present study, left-over data could be the complete data set since an HVM with cut-off values 2 and 3 were used for the analysis. Not using the complete data set could be a challenge if the aim was to confirm existing literature. However, left-over data in the present study should instead be seen as important contribution, since it is used to shed a light on new perspectives. This is important since the purpose is to develop the literature regarding farmers' decision-making when investing. Therefore, the chosen approach for the present study is appropriate.

3.2 Course of Action

This section accounts for the process of the chosen method, including the selection of respondents and a presentation of the Zaltman Metaphor Elicitation Technique (ZMET). Potential problems connected to the chosen method is also discussed.

3.2.1 Respondents

To answer the research question and to fulfil the aim of the study, respondents were selected after a few criterions. The number of respondents for the present study is nine, as previously used in a similar context by for example Jonsson and Sandlund (2017). The typical number of respondents in ZMET studies varies between 15 and 20 (Coulter & Zaltman1995). However, numerous arguments are in favour for choosing a smaller sample (e.g. Zaltman 1997; Christensen & Olson 2002). Zaltman (1997) stresses that required data is usually generated from four to five respondents. Christensen and Olson (2002) finds that the data generated from 15 respondents by far exceed the saturation point in the study. In this study the saturation point was exceeded after the sixth interview when the main findings generated from the respondents to a large extent recurred. Hence, nine respondents were considered advisable for the present study. The respondents were required to fulfil certain criterions to be included in the sample in accordance with Guest, Bunce and Johnson (2006). One criterion concerned the location in which the respondents operated. Additional criterions were the respondents already being active farmers, owning their land and acquired additional arable land the past four years. This period was considered recent enough to be relevant for this study but still generous enough to avoid limitation of respondents. By having predetermined criterions, the respondents were selected consciously to hopefully collect rich and detailed data (DiCicco-Bloom & Crabtree 2006). The respondents in the present study was found and contacted by the authors, where contact information for the respondents was received through contacts within other businesses, financial institutions, and farmers within the chosen area. This type of method for selection is called the snowball sampling, where the researchers use existing contacts or contact a small group of people who are relevant within the subject and area (Bryman & Bell 2015). Through the small group of people, the researchers establish

contacts with others and have finally a set of respondents of relevance to the study (ibid.). A snowball sampling should not be seen as representative of the population, however, the results in a qualitative study are not meant to be generalized to a population but instead give rich and deep details about a phenomenon (Frankfort-Nachmias & Nachmias 2004; Qu & Dumay 2011; Bryman & Bell 2015).

3.2.2 The Zaltman Metaphor Elicitation Technique (ZMET)

The ZMET was introduced by Coulter and Zaltman (1995), developed by Zaltman (1997), to enhance the advertising research by better capture the mental representations that affect how consumers think and act. The technique aims to elicit a person's meaning about the relevance of a certain topic and thereafter map the found meanings as mental representations (Coulter & Zaltman 1995; Zaltman 1997). Understanding the mental representations is essential to gain insight of underlying feelings that motivate a person to involve in a certain activity (Christensen & Olson 2002). According to Christensen and Olson (2002), the ZMET is powerful in eliciting and mapping the motivations behind an involvement. Before displaying this technique further, some of the underlying premises that are considered within the technique are firstly presented.

There are several premises with great support in social and biological research that when considered will help generating valid information to the research (Coulter & Zaltman 1995). Addressing some of them will help understanding the benefits of the ZMET. One premise is that most of the communication between humans is nonverbal, approximately 80 % is done without the use of words (Zaltman 1997). Furthermore, thoughts are not based on words, but images. A verbally presented thought can therefore differ from how it originally occurred (Coulter & Zaltman 1995). Another premise is that thoughts are often shaped by metaphors, understanding a certain thing in terms of another (Zaltman 1997). Metaphors are what help us understand new things and process information, they help us structure and reason between new and old knowledge and reality (ibid.). Coulter and Zaltman (1995) stresses the importance of metaphors provided by our senses, sensory images' function of embodying experiences. Zaltman (1997) explains this by body system-based metaphors that are essential when expressing thoughts of an abstract character. All people having their own mental representation, a map of their behaviour and knowledge, is also seen as an important premise (Coulter & Zaltman 1995). Mental representations decide how people will act and think regarding purchase decisions (Christensen & Olson 2002). Moreover, they are built up by main constructs, variables, affecting each person's way of thinking and acting. Stories are what holds the construct together and relate them to each other and, hence, key in understanding the mental representations (Coulter & Zaltman 1995). A big challenge for researchers is to activate these stories. The last premise to be presented here, is the structure of thought. Thoughts relevant to the researched topic are both conscious and hidden, where the hidden need to be discovered in order to become accessible (ibid.). This premise recalls that most emotions affecting thought and behaviour do not derive from a conscious level. The research method must therefore involve people enough to allow the hidden to be discovered in order to access it (Zaltman 1997).

Aware of previous knowledge, Coulter and Zaltman (1995) and Zaltman (1997) designed ZMET, a research technique with special features. ZMET particularly regards that humans think in pictures (Zaltman 1997). The technique is therefore based on pictures to allow a more

direct link to how the interviewed persons' thoughts occurred in their mind, outlining the most feasible and correct information (ibid.). Pictures have also proven to be effective in revealing hidden thoughts; what people notice reflect what mental representations are used to understand and interpret the perceived information (Coulter & Zaltman 1995). People generally find it easier to communicate visual metaphors through pictures (ibid.). Since metaphors are what help us understand new things and process information, a method that systematically seeks to bring out and interpret metaphors therefore enhances the knowledge connected to understanding underlying motivations (Zaltman 1997). Another strength of the technique is found in its ability of capturing often missed insights, such as emotions, nonverbal communication, metaphors and visual imagery, by showing them a greater attention and sensitivity (ibid.). While many other research methods are focusing on the verbal aspect, ZMET does not (ibid.). Instead, the technique focuses on and provides tools for the coding of the nonverbal data (Coulter & Zaltman 1995).

The in-depth background to and description of this technique is motivated by its previous sparing usage within this field of research. However, a few papers within the field of agriculture are based on this technique, e.g. Dickson and Magnusson (2013), Jonsson and Sandlund (2017) and Hansson and Kokko (2018). Zaltman (1997) suggests that a research method should be adapted to what is being studied. When aiming for farmers' underlying motivations and thoughts regarding an acquisition of arable land, the thoughts of the interviewed farmers must therefore be fully represented. Hence, ZMET was chosen since it focuses on that aspect, to "*elicit, describe, and map consumer's thoughts and feelings — emphasizing both beliefs and emotions*" (Christensen & Olson 2002:482). Khoo-Lattimore, Thyne and Robertson (2009) used this technique when aiming to understand underlying motivations behind a decision by identifying the feelings and thoughts of the issue studied. Hence, the aim of using ZMET as a tool in this study is to access these benefits that it offers; to map the farmers' thoughts and feelings connected to their acquisition of arable land and understand the underlying motivational factors. Focusing on the mental representations is beneficial for this study since they decide how every person will act and think regarding purchase decisions (Christensen & Olson 2002). ZMET is furthermore believed to generate more valid, reliable, and relevant insights than more commonly used interview methods (Coulter & Zaltman 1995). Using ZMET in this study is, hence, believed to be the most beneficial course of action.

Process

Seven of the interviews were conducted at the respondents' farm and two by telephone due to the prevailing circumstances of the COVID-19 pandemic. Even though the task is perceived as unfamiliar, respondents of ZMET studies have historically engaged successfully regardless of demographic characteristic (Coulter & Zaltman 1995). All interviews lasted for about 40 minutes, in accordance with Kokko and Lagerkvist (2016). The interviews were recorded after the respondent's consent and notes were taken alongside. It is stressed that recording the interviews may affect the behaviour of the respondent (Frankfort-Nachmias & Nachmias 2004). Although, the researchers need tools to remember what is being said, the primary source of data, to ensure the validity of the data throughout the research process (ibid.). To record the interviews was therefore seen as the best option for this study.

The respondents of the study were contacted 7-10 days before the interview. In accordance with previous research, the respondents were provided with a set of 25 pictures, of which they

were to choose 5-10 that expressed their meaning of the research matter (Dickson & Magnusson 2013; Jonsson & Sandlund 2017). The time frame allowed the allocation of important meanings (Zaltman 1997). The respondents were encouraged to find completing pictures if any meanings were not covered by the images in the pre-selected set. Choosing pictures themselves was essential to ensure that the meanings discussed in the interview derived from what the respondents found relevant (ibid.). Providing pictures is not included in the original ZMET but used in this study as well as previous research to assure the availability of pictures to the respondents prior to the interview (Dickson & Magnusson 2013; Jonsson & Sandlund 2017). The set of pictures aimed to facilitate for the respondents under time constraints with no time to search for and select pictures themselves. However, using pictures chosen by the researchers might be connected to the risk of a more limited result. Zaltman (1997) points out how this action could reduce the richness of the meaning as well as the probability of discover unexpected issues. Hence, in order to minimize this risk, the respondents were asked for missed images in step 2 (Table 1) during the interview. Pictures that could be associated with multiple things were pursued in the aim to trigger a wider range of thoughts and feelings connected to the acquisition of arable land among the respondents. The pictures used cannot be published due to copyright reasons, but interested readers are welcome to contact us for more information. Found in the set of pictures were photographs and illustrations that for example expressed emotions, production related issues and people in different ages and situations.

The following interviews included a process with an assortment of steps, determined after what was considered appropriate for the study (Coulter & Zaltman 1995). The original process connected to ZMET consists of eight steps, accounted for by Zaltman (1997). In this study, with support from Dickson and Magnusson (2013), Kokko and Lagerkvist (2016) and Hansson and Kokko (2018), the four steps considered to generate the most useful and sufficiently comprehensive data from the respondents of the study was chosen. The disclosure of the steps *Metaphor Elaboration*, *Sensory Images*, *Vignette* and *Digital Image* was motivated by previously being observed as difficult and disinteresting for the respondents and their non-contribution with new information or value to the study (Kokko & Lagerkvist 2016). These steps were pointed out to be of a supportive character and not to constitute the core of the process, but rather used for validation (Christensen & Olson 2002; Kokko & Lagerkvist 2016; Hansson & Kokko 2018). Another motivation of simply performing the most essential steps of ZMET is the farmers' lack of previous experience of the technique, due to its sparing use within this field of research. Hence, this study focused on the steps *Storytelling*, *Missed Images*, *Sorting* and *Construct Elicitation*, all found in Table 1. Each interview followed these steps, conducted in the same order.

Table 1. The ZMET interview process (Own version inspired by Zaltman 1997).

Step 1. Storytelling	Step 2. Missed Image	Step 3. Sorting	Step 4. Construct Elicitation
The respondents describe their choice of pictures and what they mean to them.	The respondents are asked for any missed image and to describe it thoroughly.	The respondents sort the pictures into piles which are labelled and described.	Constructs are elicited using Kelly Repertory Grid, laddering and means-end chain theory.

Storytelling. The respondents were asked to describe why they had chosen each picture, what it meant to them and how it was related to the topic. Since they had thought about the topic, they had a special story to tell about each of the chosen picture (Coulter & Zaltman 1995). Each picture represented a metaphor related to the topic; the pictures offered an entry point to explore concepts and define attributes and the stories enabled to capture the thoughts related (Zaltman 1997). This first step of the ZMET usually generates rich information about the respondents' thoughts connected to the research matter (Christensen & Olsen 2002; Kokko & Lagerkvist 2016). Hence, great attention was paid to this step during the interviews in this study.

Missed Images. The respondents were asked if something was not covered by the chosen pictures, and if so, if they could thoroughly describe a picture that would capture that meaning (Coulter & Zaltman 1995). For example, this could be pictures not included in the set of 25 pre-chosen pictures or new issues the respondents became aware of during the interview. Zaltman (1997) stressed that respondents rarely have pictures to add, but if so, these pictures should be drawn and/or added and thereafter included in the interview alongside with already selected ones. These first two steps of the interview aimed to get the respondents to unrestrictedly talk and share their meaning about the topic. They also helped the researchers to understand the central themes presented by the respondents and to record entry points, later used in the *Construct Elicitation*. To ensure comprehensiveness, the researchers regularly made short summarizes and restated collected information during these steps, in line with Christensen and Olsson (2002).

Sorting. The respondents were asked to divide the pictures into any number of piles, each with a label and a short description to it. The aim was to highlight major themes of particular importance to the respondents and thereby allow connections being made between the pictures (Coulter & Zaltman 1995). After this step the understanding of the respondents' meanings were clear, in accordance with Christensen and Olson (2002).

Construct Elicitation. To elicit constructs, a version of the Kelly Repertory Grid together with the laddering technique and MEC, all established approaches, was used (Gutman 1982; Reynolds & Gutman 1988; Zaltman 1997; Kokko & Lagerkvist 2016). Together they contributed to the understanding of the respondents' constructs over metaphors (Zaltman 1997; Kokko & Lagerkvist 2016). Three of the respondents' pictures were randomly selected and the respondents were told to explain what made two of them similar and the third different (Zaltman 1997). According to Zaltman (1997), the Kelly Grid technique usually reveals one or two of the respondent's constructs. Thereafter, the laddering technique was initiated to elicit other constructs that could be consequences of the first revealed constructs, further described in the next section (ibid.). This process was repeated until the constructs elicited were considered excessive, a state often achieved after four triads (ibid.). By continuing exploring how the ideas and concepts are linked to other consequences and concepts in this way, every value or goal connected to a certain picture can be revealed and understood (Christensen & Olson 2002). This ability of allocating and detailing the meaning of these components, all information presented by the respondents themselves, is a strength of ZMET (ibid.).

Going through these steps of the ZMET, the respondents were enabled to express their mental representation along with its connected thoughts and feelings (Christensen & Olson 2002). Accessing this data followed the aim of this study. The storytelling and the construct

elicitation together with its laddering were steps considered especially useful and pointed out as the strength of ZMET (Christensen & Olson 2002; Kokko & Lagerkvist 2016). Hansson and Kokko (2018) stress that these steps alone can provide meaningful results, including the access of respondents' unconscious feelings. Consistently, these two steps were given extra focus during the interviews to assure performance at their full potential.

3.2.3 The Laddering Technique

The laddering technique was used in the *Construct Elicitation* step of ZMET (e.g. Coulter & Zalman 1995; Zalman 1997; Christensen & Olson 2002; Kokko & Lagerkvist 2016; Hansson & Kokko 2018). This technique is frequently used together with Means-End Chain theory (MEC) since it aims to surface the respondents' attributes (A), consequences (C) and values (V), A/V/C (e.g. Russel et al. 2004; Westerlund Lind 2007; Hansson & Lagerkvist 2015; Hansson & Kokko 2018). Laddering is an in-depth interview technique performed one-to-one with the aim to understand how attributes are converted into associations with respect to self (Gutman & Reynolds 1988). In this study, there was a second researcher present during the interviews to assist the interviewer by taking notes to enable a validation process ensuring that the information collected was correctly understood. The goal in using laddering is to identify the linkage between the respondents' A/C/V, illustrated by a ladder, by getting the respondents to reflect deeply about the connections in the ladders (ibid.). Furthermore, to reveal MEC of the respondents by creating a model of their cognitive structures (Grunert 1995). The laddering technique increases the probability of linkages between associated constructs are being understood by the researchers (Coulter & Zalman 1995). This study was based on a soft laddering technique, allowing the respondents to speak more freely and move between ladders in contrast to hard laddering where they must produce the ladders one by one (Grunert & Grunert 1995). This approach made it possible to provide different reasons for a certain attribute's importance and give the same reason for several attributes (Humble & Palmér 2018). The choice is further motivated by the limited knowledge about the respondents' cognitive categories prior to the interviews, as is the case in this study, a situation where soft laddering is considered more appropriate (Grunert & Grunert 1995). Aware of previously experienced challenges related to the laddering technique, measures to limit and prevent these challenges were taken in the present study. Using soft laddering was one of these measures since it facilitated for both the respondents and the researchers during the interviews due to aforementioned reasons (Jonsson & Sandlund 2017). This was important since the laddering technique has sometimes been found to be demanding for both parties (Veludo-de-Oliveira, Ikeda & Campomar 2006).

The laddering technique follows a certain procedure. When using ZMET, keywords mentioned in the first two steps and the constructs generated from the Kelly Grid constitutes the entry points of the laddering procedure. Allowing the respondents to generate the entry points without disturbance or influences from the researchers upholds the validity of the study and, hence, minimizes the risk of researcher bias as presented by Grunert and Grunert (1995). These entry points are followed up with a series of directed probes, such as the question "Why is it important to you?" repeatedly posed to the respondents (Reynolds & Gutman 1988), as exemplified in Figure 3. These questions force the respondents to explore their mental ladders by justifying why these concepts are important to them, until they cannot justify the importance further and the end-value is revealed (Hansson & Lagerkvist 2015). By

continuing exploring how the ideas and concepts are linked to other consequences and concepts like this, every value or goal connected to a certain entry point can be revealed and understood (Christensen & Olson 2002). The laddering might come to a rather sensitive point, where the respondent in different ways chooses not to answer. To encourage the respondent beyond this point, the researcher might share a relevant fact of personal character or introduce a third person context (Reynolds & Olson 2001). Using this interview technique, it is important to inform and remind the respondents that there are no right or wrong answers (Reynolds & Gutman 1988). Hence, this was addressed both beforehand and during the interview in order to make the respondents as comfortable and honest as possible.

Interviewer:	*Why did you choose to invest in arable land?*
Farmer: ***(attribute)***	*Because our neighbour was selling, so it was a very good location.*
Interviewer:	*Why is the location important to you?*
Farmer: ***(consequence)***	*Because then I can avoid transportations and save money, it is more efficient.*
Interviewer:	*Why is it important to save and be efficient?*
Farmer: ***(value)***	*To earn money and be profitable.*
Interviewer:	*Why is it important to be profitable?*
Farmer:	*Oh well, it just is!*

Figure 3. Illustration of a sequence of an interview using the laddering technique (Own work).

In this study, the main aim of the laddering was to increase the understanding of the respondents' MEC by revealing the connections between their constructs. The laddering technique enabled the eliciting of construct patterns and the detailing of the respondents' mental representations through information presented by the respondents themselves - a strength of the laddering part of ZMET (Coulter & Zaltman 1995; Christensen & Olson 2002). Within this study, it increased the understanding of which attributes connected to what affected the acquisitions were linked to self-relevant consequences and values of the farmer. Furthermore, the method was received well by the farmers and continuously experienced as helpful in extracting deeper meanings than those initially presented.

3.2.4 Coding and analysis of collected data

The analysis of the data followed the recommendations of Reynolds and Gutman (1988). These recommendations are followed in other studies using the laddering technique and, thus, considered suitable for this study (e.g. Westerlund Lind 2007; Hansson & Lagerkvist 2015; Jonsson & Sandlund 2017). Initially, the elements received during the interviews were content-analysed and classified into A/C/V with the aim to provide an overview of the elements elicited (Reynolds & Gutman 1988; Reynolds & Olson 2001; Breakwell 2004). Thereafter, categories or summery codes within each of these three levels of elements were

developed to enable a summary of the data. The codes, onwards referred to as master codes, needed to be broad enough to capture all essential elements but narrow enough to allow an assemblance of the data. There is no acknowledged technique for creating master codes other than using the common sense (Breakwell 2004). Reynolds and Gutman (1988) highlight the importance of focusing on the relationship between elements central to the research matter rather than capturing all elements just for the sake of doing so. Hence, the master codes in this study were derived by the researchers' best endeavours to reflect the underlying motivational factors of farmers when acquiring arable land. How the elements were clustered into master codes in this study can be found in the *Coding table*, Appendix 1. From the master codes, an implication matrix illustrating the direct and indirect relations and their frequency between the different elements was constructed (Reynolds & Gutman 1988). The implication matrix was compiled in a hierarchal value map (HVM), summarizing the ladders generated from the interviews. The *ladders* refer to the elements elicited from the respondents during the interviews and the *chains* to the sequences in the implication matrix and the HVM. The aim of the HVM was to display the dominant underlying motivational factors of the interviewed farmers' acquisitions (Reynolds & Gutman 1988; Breakwell 2004). Hence, the HVM constitute the main result of this study, as found in Hansson and Lagerkvist (2015). Both the implication matrix and the HVM were created in LadderUX, a program well-used in this context in previous studies (e.g. Hansson & Lagerkvist 2015; Jonsson & Sandlund 2017; Löfgren & Olsson 2019).

When designing the HVM, an important adjustment is what cut-off value to apply. The cut-off value determines how many times the connection between elements must occur for it to show in the HVM (Reynolds & Gutman 1988). Hence, if the cut-off level is three, a connection must occur three times to be represented in the HVM. Multiple cut-off levels are usually applied, typically from 3-5, after which the one generating the most descriptive and reliable linkages in the HVM is chosen (ibid.). Grunert, Grunert and Sørensen (1995) and Costa, Dekker and Jongen (2004) highlight the trade-off problematization of the matter; the balance between presenting enough information without interfering with the comprehensibility of the map, keeping it simple. In this study, the most appropriate cut-off value according to previous criteria was determined as 2/3/3. This cut-off value was found to generate the most descriptive, yet interpretable, data.

During the coding and analysis of the data in the present study, two critical issues were encountered; the translation of the raw data from Swedish to English and the absence of guidelines in previous literature regarding A/C/V in the context of arable land investments. Xian (2008) argues that there are unavoidable problems emerging when translating qualitative data, mainly regarding the linguistic, socio-cultural, and mythological differences between the languages used. Hence, an understanding of the overall context is vital for a successful translation (ibid.). Since the aim of this study was to capture the main motivational factors and not to present the exact meanings of each farmer, the translation problematic was reduced. Aware of this issue during the translation process, the work was conducted in a more consistent way to minimize the impact on the result. The absence of previous literature regarding A/C/V in this context consequently resulted in the need of deciding on such, based upon the data generated from the interviews. Hence, the A/C/V presented were derived by a subjective interpretation. To uphold the transparency and validity by offering the reader the possibility of an own interpretation, the coding table is provided in Appendix 1. Another issue potentially affecting the result of the study was the prevailing circumstances of the COVID-

19 pandemic when the study was conducted. Among the restrictions following the pandemic, unnecessary physical contact or any contact with people at risk was to be avoided (World Health Organization 2020). Hence, two of the scheduled interviews were cancelled and two were completed by telephone. The telephone interviews were perceived as generating as much and as deep information as those carried out at the respondents' farms. Irrespectively interview form, the farmer engaged in the storytelling of the pictures chosen and deeply engaged in the reasoning process during the laddering phase. Hence, the data generated by telephone interviews were considered authentic and included in the study alongside the other interviews.

3.3 Ethical Principles and Considerations

When conducting a qualitative study, the researchers' awareness of the ethical issues connected to the chosen approach is important (Kvale & Brinkmann 2014; Bryman & Bell 2015). This part of the study is important since ethical issues can affect the respondents and in the end the outcome of the study (Kvale & Brinkmann 2014). To ensure that certain ethical issues have been accounted for, the respondents must understand the aim of the study and agree to participate in it (Bryman & Bell 2015). The respondents were firstly contacted by telephone and given a brief introduction about the study and asked for potential participation. Thus, the respondents participating in the present study is voluntarily. Another ethical issue that must be considered is confidentiality, where identities and records of individuals must be confidential throughout the research process (ibid.). There are difficulties with confidentiality when it comes to qualitative studies, where specific measures must be taken to maintain the identification of persons, businesses, and places confidential and anonymous (ibid.). To ensure that the anonymity of the respondents imbues the study, the respondents were informed about the researchers' exclusive access to their information and interview material already in the first contact. The aim was, thus, to receive more personal answers and statements regarding why the respondents invested in additional arable land. Furthermore, traceable or specific information connected to the respondents was not included in results or the description of the respondents to protect their anonymity (Kvale & Brinkmann 2014). Finally, any delicate personal data and information was deleted from the files of materials from the interviews.

4 Results

In this chapter, the background information of the respondents is presented. Thereafter, a summary of the information generated during the interviews is presented in a Hierarchical Value Map (HVM). The HVM and what underlies the used master codes are presented more in-depth, following the structure of attributes, consequences, and values.

4.1 Respondent background information

Nine farmers took part in this study, a number considered suitable for the chosen method (Zaltman 1997; Jonsson & Sandlund 2017). The descriptive statistics of the respondents, presented as mean values, are illustrated in Table 2. There were, however, considerable differences in the size of the farms and the number of hectares acquired. This adds to the study since the result covers the underlying motivational factors of farmers under different preconditions. Regarding the age of the respondents, the difference between the oldest and the youngest respondent was 25 years. No women took part in the study since the snowball technique used did not generate any female farmers. This might have affected the result of the study and must, hence, be considered when assessing the result.

Table 2. Descriptive statistics of the respondents (Own work).

Variable	**Mean Value**
Age (years)	50,2
Number of women	0
Number of men	9
Number of hectares today	344
Number of hectares acquired	168

4.2 Results

All respondents in the present study chose 5-8 pictures from the provided set of 25 pictures. These pictures constituted the starting point for the respondents' storytelling. Two of the pictures were consistently chosen by all the respondents and additionally three of almost all. The pictures were connected to growth in size and financial respectively, conducting business, the future generations, cultivating crops and to see how the crops developed during the season. Four of the pictures were never selected, out of which the majority were illustrations of emotional states. With the storytelling step completed and entry points for the upcoming laddering procedure generated, the respondents were asked for missed images. During this step, no additional images were presented. Subsequently, the sorting step was initiated. When sorting the pictures into piles, the entry points mentioned in the storytelling were mainly reiterated. Although the reiteration, some of the respondents furthered their meaning during this step. The last step, the construct elicitation and its laddering, allowed the creation of ladders by forcing the respondents to explore what value was connected to each of the concepts presented. These ladders constituted the basis for the analysis of the present study.

The coding of the data resulted in 80 ladders consisting of 36 different elements, namely 14 attributes, 14 consequences and 8 values. There was an average of 8.89 ladders per respondent, with an average of 3.53 elements per ladder. The high number of ladders indicates a complexity in the matter of acquiring arable land (Breakwell 2004). Using LadderUX, two different hierarchical value maps (HVM) were created; one illustrating the complete data set and the other with the cut-off values 2 and 3, following guidelines by Leppard, Russell and Cox (2004). In the two HVMs, the number of elements and amount of links between them differ. The HVM with the complete data set, presented in Appendix 2, has a total of 546 links between the elements where 344 are direct links and 202 are indirect links. In order to receive an HVM that was easier to comprehend, cut-off values of 2 and 3 were used, cut-off 2 was used for attributes and cut-off 3 for consequences and values (i.e. 2/3/3), see Figure 4. This HVM was used for the present study's analysis. It contains a total of 273 links between the elements, corresponding to 50 % of the links in the complete data set. This amount of data was considered to pass the saturation point and to hold enough, yet comprehensible, data, lining with the goal pronounced by Grunert, Grunert and Sørensen (1995). Of these 273 links, 172 are direct links and 101 are indirect links. The HVM illustrates a total of 30 elements, with 11 attributes, 11 consequences and 8 values. Due to the cut-off, elements that were mentioned by the respondents but not frequent enough to pass the chosen cut-off value were not represented in the HVM used for the analysis of the present study.

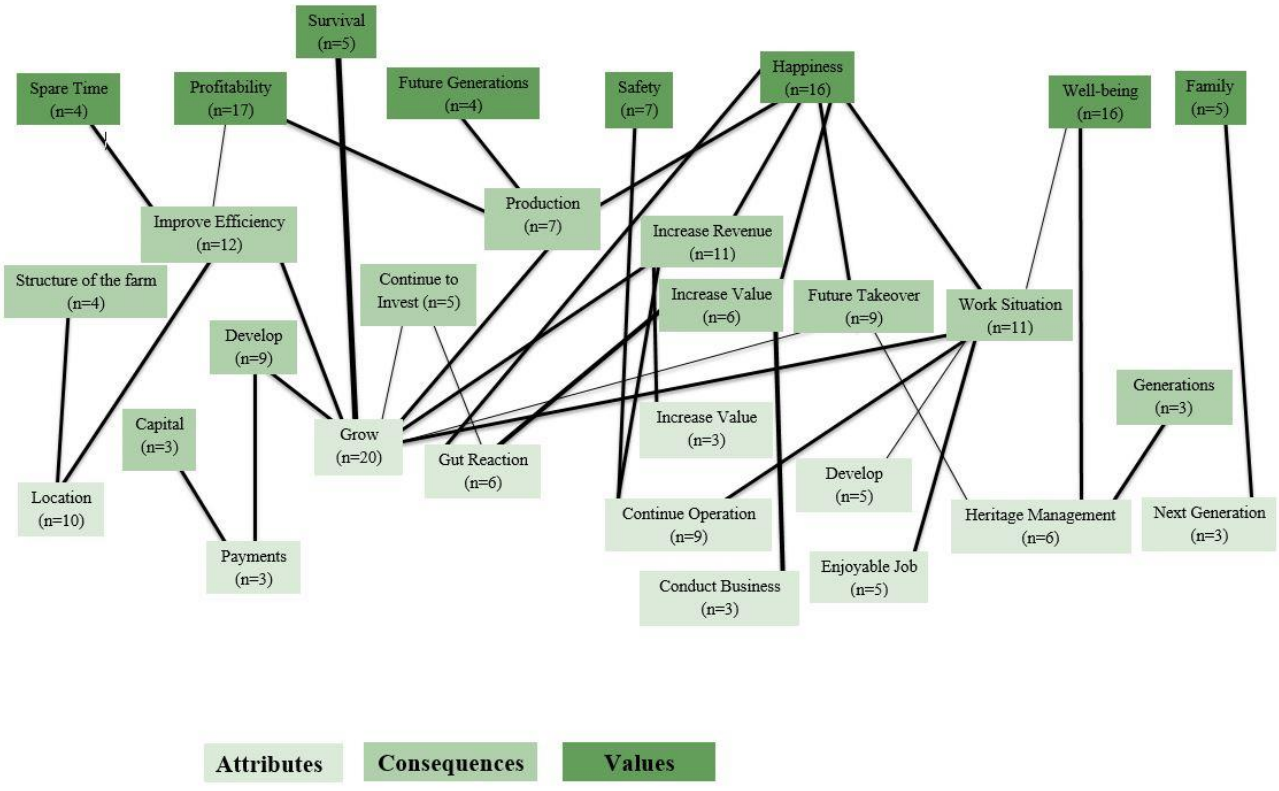

Figure 4. Hierarchical value map with cut-off values 2 and 3. Thicker lines indicate a stronger connection between the elements (Own illustration based on LadderUX).

4.2.1 Attributes

There were 11 attributes acknowledged in connections to other elements more frequently than the cut-off value of 2/3/3, namely “Grow”, “Location”, “Continue Operation”, “Gut Reaction, “Heritage Management”, “Develop”, “Enjoyable Job”, “Increase Value”, “Payments”, “Conduct Business” and “Next Generation”. Hence, most representative of what the respondents pointed out during the interviews when describing the chosen pictures. These attributes therefore reflect the most important underlying motivational factors of the respondents.

How many times an element was mentioned somewhat indicates its importance. The most prominent attribute “Grow” was mentioned 20 times during the interviews. The respondents referred to grow in terms of increasing the number of hectares, enlarge the enterprise, assessing economies of scale and hiring. For example, many respondents pointed out the need to grow to keep up with the surrounding farms. “Location” was the second most important attribute, mentioned 10 times. This attribute mainly focused on the convenience of the acquired area’s closeness to the farm. Acquiring a neighboring property was of special interest and referred to as a chance that did not occur regularly. “Gut Reaction” was mentioned 6 times, indicating a good feeling for a favorable investment and the feeling of capturing an opportunity. “Heritage Management”, also mentioned 6 times, expressed the importance and responsibility to successfully manage the farm inherited.

4.2.2 Consequences

Every attribute led to at least one consequence, either unsolicited through the storytelling or elicited during the laddering phase. The connections between the attributes and the consequences are illustrated in the HVM, see Figure 4. The chosen cut-off value resulted in 11 consequences displayed in the HVM; “Improve Efficiency”, “Increase Revenue”, “Work Situation”, “Future Takeover”, “Develop”, “Production”, “Increase Value”, “Continue to Invest”, “Structure of the farm”, “Capital” and “Generations”.

The four most mentioned, hence the most highlighted, consequences were to “Improve Efficiency” (12 times), “Increase Revenue” (11 times), “Work Situation” (11 times) and “Future” (9 times). The most prominent, “Improve Efficiency”, was a consequence of the main attributes “Location” and “Grow”. The favorable location of the land acquired was consequently important for improved efficiency of the daily work. Operation close to the farming center limit costly and time-consuming transportations and, hence, improves efficiency regarding both time and money. The improved efficiency from growing was mainly found in the consequences of splitting up costs and allowing investments in contemporary machines. To “Increase Revenue” was frequently described as a key consequence by the farmers, derived from the attributes “Grow”, “Increase Value” and “Continue Operation”. These attributes were in different ways connected to the earning of money and, hence, to an increased revenue. To grow was by many of the respondents seen as a precondition for a long-term profitability. An aspect closely linked to the aspect of continued operation, emphasizing the ability of supporting the family and saving for the retirement. Consequently, continued and extended operation itself was found to increase revenue. The respondents found the attribute of future increased value of the land to create

economic space, enabling further development associated with increased revenues. Altogether, these consequences were summarized as the master code “Increase revenue”. Regarding the “Work Situation”, the HVM illustrates its connection to the attributes “Enjoyable Job”, “Develop”, “Continue Operation” and “Grow”. During the interviews, the farmers described how these attributes led to a work situation in which they felt satisfaction. The acquisition made it possible for the respondents to affect their work situation and inspired them to continue their work. The farmers expressed appreciation for their work situation and declared how fun farming was, a consequence of aforementioned attributes. The last consequence to be described more thoroughly in this section is “Future Takeover", a consequence of “Grow” and “Heritage Management”. The growth was considered vital in making it possible for the future generation to take over. The ambition of growing was presented as building something competitive enough to enable the farmer’s children to support themselves by operating the farm in the future. Furthermore, by offering a satisfying economic start, the business would not be too burdensome to take over. The fact that many of the respondents inherited the farm was referred to as increasing the willingness to keep the farm existing and to make a future take-over possible.

Acquiring arable land was connected to other consequences, such as being able to influence the operation and doing so in harmony with nature. The acquisition was also connected to achieving success at a personal level. Although brought up, these consequences were not mentioned frequently enough to be visible in the HVM used for this analysis.

4.2.3 Values

The values displayed in the HVM reflect the main goal of the acquisition for each of the respondents in this study. A total of 8 values were identified in the present study: “Profitability”, “Happiness”, “Well-being”, “Safety”, “Survival”, “Family”, “Future Generations” and “Spare-time”.

The value “Profitability” was mentioned 17 times by the respondents and the most prominent one. Profitability was the value of the consequences “Improve Efficiency” and “Production” and derived from concepts such as *improve the financial situation*, *capacity to invest* and to *have more money*. The respondents discussed improved efficiency in terms of saving both time and money, connected to an increased profitability. Production as in producing more and to receive higher yields was considered important to improve profitability. The improved profitability aimed to make further investments in arable land possible and for the feeling of possessing money. “Happiness”, mentioned 16 times, was the value of the consequences “Production”, “Increase Revenue”, “Future Takeover” and “Work Situation”. This value derived from concepts such as: *joy; challenge oneself,* which was mentioned in the context of how challenges within farming was connected to personal development and satisfaction, which for the respondents gave them happiness; *having fun at work,* and; *continue for a long time,* mentioned in the context of how farming gave the respondents happiness and how they wished to continue in the future. The respondents discussed how improved production of the farm and an increased revenue led to a personal state of happiness. Finally, the respondents described how they enjoyed their work and lifestyle, with the consequence “Work Situation” generating the value “Happiness”. “Well-being”, also mentioned 16 times, was the value of the consequence “Work-Situation”. This value derived from concepts such as: *feel well*; *feel good*; *personal development,* where the respondents discussed how their work-situation

contributed to personal development which was important for their well-being; *thrive on what you do*, in order to feel well, you must enjoy your job and lifestyle, and; *social life*, very important for the respondents both in terms of sharing knowledge and belonging to a group, since farming can be rather lonely.

In addition to the three most prominent values, five more are illustrated in the HVM. “Safety”, mentioned 7 times, was the value of the consequence “Continue Operation”. The value derived from concepts such as *safety in the future for children*, by investing in arable land for continuous value growth of the property providing safety for their children; *secure investment*, the investment in arable land was considered to be safe, referring to the historically increased price for land, and; *safeguard the place*, the respondents discussing how the location was connected to safety and investing in additional arable land to the opportunity to continue farming in the same place. The respondents described how they would not have decided to invest if they did not consider it a reasonable investment, since they wanted to feel secure. Furthermore, the respondents expressed how they sought to ensure their children's possibility to take over the business or in other ways rely on it in the future to support themselves. The value “Survival” was mentioned 5 times as the end to the consequence “Grow”. The respondents discussed the importance of a continuous growth of the business in order to stay competitive and survive. “Survival” derived from concepts such as *continue farming*, *improve the situation of the business* and *competitive unit* where the respondents described how they wanted to continue with their work and lifestyle, a situation with the precondition of the business’ survival. Moreover, acquiring additional arable land allowed to split up costs, such as machinery costs, and by that improve the situation of the business. Through this, the respondents described how they moved towards a competitive unit more likely to survive. “Family” was also mentioned 5 times by the respondents and value of the consequence “Next Generation”. The respondents described how the decision of acquiring arable land was made with thoughts of future generations but also in agreement with their family today. The support from their families and to do what was best for them was highlighted, both in the present moment and in the future. “Future Generations”, mentioned 4 times, was the value of the consequence “Production” and attribute “Grow”. The respondents discussed the importance of building a business that would be competitive in the future and worthy a takeover by future generations, for example by improving the productivity. By growing the business through the acquisition of arable land, the respondents described an improved production. Lastly, the value “Spare-time” was mentioned 4 times by the respondents as the value of “Improve Efficiency”, a consequence of the attributes “Location” and “Grow”. This value derived from concepts such as *money* and *time to spare* where the respondents described how they wanted time to do other things, even though they enjoyed the lifestyle of being a farmer. To achieve this, the business would have to be efficient and the acquired arable land closely located according to the respondents. Furthermore, the respondents discussed how efficiency in terms of saving money required split up costs. Therefore, the business and number of hectares would have to grow.

The three most prominent ladders from the data are illustrated in Figure 5. These ladders were mentioned by all the respondents in the present study.

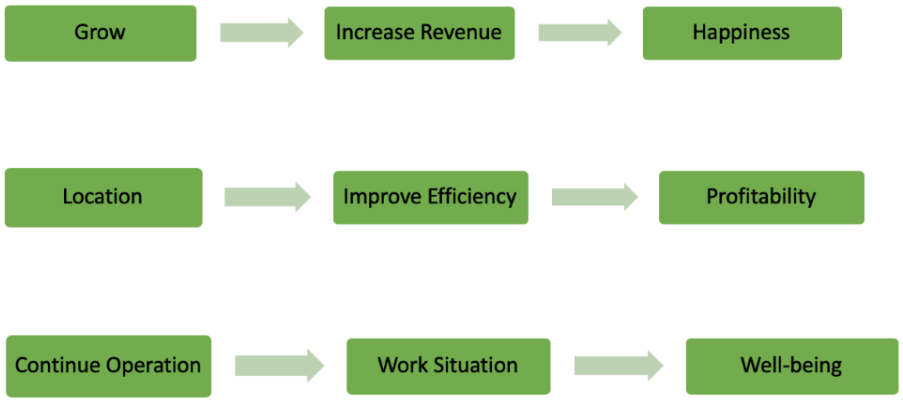

Figure 5. The three most prominent ladders (Own illustration based on LadderUX).

5 Discussion and Conclusion

In this chapter, the discussion and conclusion are disclosed. First, the results of the study are discussed in relation to previous literature. The aim of this approach is to provide further understanding of the results and how they relate to and differ from previous findings on the matter. Thereafter, a critical reflection is followed by suggestions for future studies after which the chapter ends with a conclusion.

5.1 Discussion

The present study was designed to identify the underlying motivational factors of farmers acquiring arable land in Östergötland, one of the highest priced regions for arable land in Sweden with 2.5 the average price in the country (www, Swedish Board of Agriculture 2019). To fulfil this aim, interviews were carried out with nine farmers who acquired additional arable land during the past four years, using ZMET. The method, rarely used within the field and never in the context of acquire arable land, was found to be helpful in generating a rich result. The interviews began with the respondents freely describing why each picture was chosen and what it meant in the context of acquiring arable land, offering an initial understanding of the respondent's overall motivations. The continuing laddering phase was perceived as helping the respondents deeper into their reasoning process, enabling the pronunciation of thoughts and values that might not have appeared using another method. Hence, the chosen approach and method generated a unique result since the issue of acquiring arable land have prior to this study never been analysed from this perspective. Using this method, the present study has brought new information concerning underlying motivational factors of farmers acquiring arable land to light. The in-depth information generated is, thus, a contribution to already existing findings on the matter. This unique, in-depth information derived from characteristics of the method such as (1) the farmers themselves controlling which aspects were highlighted during the interviews through their initial storytelling, and (2) the closely followed, in-depth reasoning process of the farmers during the laddering phase. Another benefit of the ZMET was found in its ability of keeping the research matter at focus in the conversation and, hence, allowing to reach deeper within the aim of the study. Coulter and Zaltman (1995) observed how respondents of ZMET studies were dedicated to the task, even though the task was often perceived unfamiliar. This study supports previous observation with the respondents being positive to the method chosen, tackling the task with great curiosity and expressing how appreciated it was to reflect about their acquisotion. The storytelling and the construct elicitation were steps considered especially useful in previous research (Christensen & Olson 2002; Kokko & Lagerkvist 2016). Hansson and Kokko (2018) stressed that these steps alone could provide meaningful results. Consistently, these steps were found to generate rich information that fulfilled the aim of this study. Remaining steps, missed image and sorting (Table 1), were of a confirmative character. Hence, future research within this area using ZMET might benefit from targeting solely the storytelling and the construct elicitation steps. The substantial result of the present study was compiled into an HVM, which was made comprehensible using cut-off value 2/3/3 (Figure 4). The cut-off value generated an HVM where half of the connections from the complete data set remained. This cut-off value was applied since it generated the most descriptive, yet interpretable, data. Many of the elements mentioned but left out of the HVM were only mentioned by one of the

respondents. Hence, these elements were not considered as important for the entire group of respondents or for the result.

The most mentioned value by the interviewed farmers, mentioned one more time than “Happiness” and “Well-being", was “Profitability”. Hence, financial aspects were important motivational factors for the respondents in the present study. The financial aspects of the outcome will therefore be discussed in relation to financial literature presented in the literature review. Further, followed by a similar discussion of the relation concerning behavioural aspects.

Calculative characteristics of the acquisition, vital when deciding on profitability, was not given much attention by the respondents in the present study. Since prior financial literature regarding the acquisition of arable land often place great emphasis in this matter, the net present value (NPV) referred to as the most obvious calculation (e.g. Turvey 2002; Forster 2006; Devadoss & Manchu 2007; Boehlje et al. 2011), the outcome was somewhat surprising. Instead of focusing on the previously stressed aspects of profitability, the ZMET allowed the respondents to reason further. Cash flows for instance, significant when analysing an investment through the NPV, were barely mentioned. Interest rate payments to financers, an outgoing flow regarded in the NPV, appeared twice in the storytelling step - contrasting earlier findings suggesting the external interest rate payments of high importance (Schmitz & Shalit 1982; Gertel 1990; Moss 1997; Devadoss & Manchu 2007). The high price was not referred to as problematic but often mentioned in the context of continued operation and constant demand in the region characterised by high presence of agricultural activity and business. Therefore, the high price somewhat indicated security in terms of safeguarding the value of the land in the future linked to a belief of never declining demand. Regarding the aim of the study, to deepen the understanding of why these acquisitions occur in areas with remarkably high prices per hectare, this can be considered a financial motivational factor. The issue of capital safety and development over time relate to another financial aspect highlighted by many of the respondents; the consequence “Increased Value” of the land acquired. The farmers described how the acquisition, given that the value would increase over time, aimed to create economic space for the possibility of future investments. These results reflect those of Kletke and Plaxico (1979) and Schmitz and Shalit (1982) who stress that the growing equity base itself can be an argument for acquiring arable land. Enabling expansion possibilities was sconsidered highly important since growing, the most mentioned attribute, was regarded as a precondition for a long-term profitability and survival by many of the respondents.

As mentioned in the literature review, prior studies in the research field used the hedonic pricing method in the context of acquiring arable land (e.g. Clifton, Elad & Epperson 1994; Maddison 2000; Ma & Swinton 2012; Balmann et al. 2013). Balmann et al. (2013) accounts for four groups that often returns in hedonic valuation: productivity, neighbourhood, location, and environmental characteristics. All factors were brought up by the respondents during the storytelling part of the interviews, indicating the aspects’ relevance for the farmers. However, as for the NPV, these aspects were not referred to numerically as usual for the method but mentioned in other ways. Using ZMET, hence, generated a new perspective. The locational characteristic gained the most attention; “Location” being the second most mentioned attribute. The main consequence of the location offered was “Improved Efficiency” connected to the value “Profitability”. The preferable location, often referred to as a nearby property, was a strong motivational factor to acquire arable land. Several of the respondents highlighted

how seldom the opportunity to acquire a neighbouring unit arose, referred to as a once-in-a-lifetime opportunity, resulting in the urge to acquire if having the possibility. These thoughts, connected to the financial literature although not presented in numbers, are thus of a more rational character. However, the respondents also highlighted the emotional aspect of acquiring arable land, such as the "Gut Reaction". This would most likely not have been the result using another method. Hence, rational motivational factors when acquiring arable land, such as soil quality and location, were only affecting the respondents and their decision to acquire but not constituting determining factors.

The most mentioned value was, as aforementioned, "Profitability" and therefore of a financial character. However, the other two of the three most prominent values were of non-financial character. Several reports have discussed how both financial and non-financial values act as determinants for farmers decision-making (e.g. Willock et al. 1999; Howley, Dillon & Hennesy 2014; Howley et al. 2015), a phenomenon that has been observed in the present study as well. The result of the present study shows that most of the values stated by the respondents are of behavioural character and should therefore be considered as decisive for the respondents when acquiring arable land. Attributes and consequences elicited by the respondents were mainly of financial character but with values of behavioural character in the end. Hence, the converge of the rational motivational factors of financial character and the behavioural aspects was described as important. This aligns to what is described by Garforth (2010) and Howley et al. (2015) as farmers' motivational factors for continuing their lifestyle are not simply financial. Showing this is strongly believed to be connected to chosen method, due to its ability of capturing all aspects brought up by the respondents.

As described in the literature review, goals and values are motivational factors where goals are defined as ends or states in which an individual wish to be in (Gasson 1973). Two of the three most prominent ladders in the present study showed values of behavioural character, namely "Happiness" and "Well-being". This result shows that the respondents' motivational factors are goals of wanted personal states rather than of monetary nature. In addition, the respondents described how they acquired arable land to ensure survival through growth - the underlying motivational factor was to be able to continue with the lifestyle of being a farmer. The respondents described how they enjoyed their work and wanted to continue because it gave them joy, constituting a motivational factor when acquiring arable land. Moreover, how it would have been easier and perhaps more favourable to invest their money in something else but being able to continue with their lifestyle brought them happiness. Their description of how joy and happiness was important for them is an example of how values of behavioural character act as determinants in the decision-making of farmers.

Several reports have shown that factors such as pride, identity and independence motivate a farming lifestyle (e.g. Key 2005; Key & Roberts 2009; Howley, Dillon & Hennesy 2014; Howley et al. 2015). However, these factors were not raised as motivational factors for a continued lifestyle by the respondents in the present study. As described in the literature review, there are several motivational factors of farmers where the lifestyle related to farming is highly valued (Howley et al. 2015). If the lifestyle of farming is highly valued, the farmer often wants to make room for future generations (Gasson 1973; Willock et al. 1999). In addition, Dessein and Nevens (2007) described how a relevant concept related to the endeavours of being a farmer is being part of a tradition. The respondents in the present study described how the acquisition was made with regards to their family's future. It was important for them to invest for the business to grow and, in the end, survive. Furthermore, the

respondents described how the survival of the business was important since many of them had inherited the farm and was part of a tradition. They described how they wanted the tradition to continue throughout future generations. Therefore, an acquisition of arable land was a way to ensure that the business would survive and continuously being a competitive unit that was worth taking over. The respondents also described how it was important for them to give their children the possibility to have the same lifestyle as they have, in other words to take over the family business. Many of the respondents described how being able to give future generations a possibility to live the same lifestyle gave them joy and had a positive contribution to their well-being.

5.1.1 Critical refection

This study aims to illustrate the underlying motivational factors when acquiring arable land of the interviewed farmers in an HVM. To achieve this, ZMET was used. Since the method chosen is sparing used within this field of research, the results might not be fully comparable to previous literature using other methods since the result is highly affected by the applied method. For example, numerical factors are often presented in previous literature regarding the financial aspects of the acquirement of arable land (e.g. Clifton, Elad & Epperson 1994; Bastian et al. 2002; Boehlje et al. 2011; Gaspars-Wieloch 2019). In the present study, there is a lack of numerical factors mentioned by the respondents. Thus, not adopting the same approach as previous research within this area enables a different result to form. Although the resemblance with previous research is reduced, there are benefits such as increased and deeper understanding connected to the method used in the present study. By forcing the respondents deeper into their reasoning processes, the cause-effect relationship between elements can be understood and illustrated. Such deep reasoning cannot be assessed using, for example, a hedonic pricing method. The validity of the result generated in present study is furthermore strong, supported by its pronounced benefits when applied in similar academic studies (e.g. Hansson & Lagerkvist 2015; Hansson & Kokko 2018, Löfgren & Olsson 2019).

The sample of respondents is of further interest in this context. With a small sample size, caution must be taken when assessing the result as the findings highly reflect each of the farmers' meanings. An experienced saturation point, however, occurred after the sixth interview. This indicates the collective importance of aspects and values of the interviewed farmers, origin from the same region. Hence, one might argue that farmers operating in similar conditions as in this study are not solely driven by profit maximisation when acquiring arable land but also by other factors connected to behavioural aspects.

Subjectivity when interpreting and coding the data is another potential concern. To limit the impact of subjectivity, a great transparency was applied throughout the study. Measures such as attaching the coding table (Appendix 1) and the complete data set (Appendix 2) were taken to provide the reader with the original and complete data. The aim was to minimize the known risks connected to subjectivity and the trade-off problematics.

5.1.2 Future studies

To add to the understanding of farmers' underlying motivational factors when acquiring arable land, future research focusing on another region is suggested. A different geographical focus will investigate if the motivational factors differ due to situational factors and, hence,

help to develop the full picture of the matter. A question that remains unanswered in this study is the potential impact of female absence among the respondents. Thus, it would be interesting to conduct a similar study within the same region to determine potential differences between male and female farmers' underlying motivational factors when acquiring arable land. Another suggested investigation is underlying motivational factors preventing farmers, with initially shown interest, to acquire additional arable land. Since acquire arable land is much more complex than simply financial aspects, the values behind such withdraw would be interesting to examine in depth using ZMET. The results of the present study can be of use for policymakers and advisers, since it is obvious that the motivational factors of farmers are not only of financial character. In addition, based on Howley, Dillon and Hennesy (2014) and the result of the present study, the development of economic models should be made with consideration to how both financial and non-financial factors influence farmers' decision-making.

5.2 Conclusion

The present study aimed to determine the underlying motivational factors of the interviewed farmers when acquiring arable land. The results were generated using ZMET, a well-received method by the farmers, and presented in an HVM with the cut-off value 2/3/3. Although this method was not originally constructed to be used in the context of farmers' behaviour and decision-making, several studies within the field have used it in recent time (e.g. Dickson and Magnusson 2013; Jonsson and Sandlund 2017; Hansson & Kokko 2018). Using ZMET, the present study was able to identify underlying motivational factors of farmers' acquisition of arable land.

The present study has identified the values connected to the farmers' acquisition of arable land to be "Profitability", "Happiness", "Well-being", "Safety", "Survival", "Family", "Future Generations" and "Spare Time". The interviewed farmers mainly acquired arable land based on location, to grow and to be able to continue operation, meaning increased revenue and efficiency as well as improved work situation. Thus, the most prominent ladders were found to be the location of the acquired land leading to improved efficiency and profitability, increased revenue through growth contributing to happiness, and achieved well-being through a desired work situation by continued operation (as found in Figure 5). Hence, the most mentioned value was of financial character, closely followed by two values of behavioural character – a result of interviews in which the content was fully controlled by the respondents. Showing this, the present study provides a deeper insight regarding the respondents' underlying motivational factors when acquiring arable land.

The result from the present study shows a complex set of factors that motivates farmers in their decision to acquire arable land. Furthermore, that motivational factors of farmers when acquiring arable land cannot be characterized as either financial or non-financial, because they are closely linked. Building on Howley, Dillon and Hennesy (2014), we argue that it is useful for future research to integrate non-financial factors in economic models to receive a more holistic picture of the matter. The results from the present study, with two of the three most

prominent values being of behavioural character, shows that the motivational factors of farmers when acquiring arable land are not strictly financial. It is therefore important to include both financial and non-financial aspects when building economic models and analysing farmers' decision-making and behaviour.

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Appendix 1 - Coding Table

Attributes

Grow	Grow Increase arable land Growing Larger enterprise Economies of scale Allocate machinery costs Hire
Location	The place, convenient Satisfying distance Neighboring property The place: the chance does not come often Neighborliness
Continue Operation	Make a continued modern operation possible Keep cultivating Viable farming Further existence Keep working Continuous demand for food
Gut Reaction	Favorable investment Felt good Saw an opportunity
Heritage Management	Manage the heritage Inherited Raised at the farm Passion for history
Develop	Develop the business Improve the property Own instead of leasing
Enjoyable Job	Happiness Fun job Produce
Increase Value	Future increase of value Future increase of value Return on equity
Payments	Low interest rates Expensive land
Conduct Business	Fun doing business Do business
Next Generation	Value for the next generation Possible heir Make decision with the family

Rationalize	Rationalize Improve the land consolidation
Soil Quality	Good soil Fertile area

Consequences

Improve Efficiency	Efficiency, save time Efficiency, save money Avoid long way transportation Better timing on measures More efficient for each year Be able to buy good machines
Increase Revenue	Better profitability Make it profitable Money for the retirement Support the family
Work Situation	Maintain happiness Affect the working situation Satisfied Have the hobby as profession More leisure Exchange (machines and knowledge)
Future Take-over	Possible for the future generation to continue Satisfying economic start for the one taking over Possible for the children to support themselves A competitive unit to leave for the children
Develop	Follow the development in size Modernize the farm Make future development possible Big investment regarding previous size
Production	Higher yields Being able to affect the harvest Exciting with the result

Increase Value	Increase of land value Development of value Constant demand for the land
Continue to invest	More and bigger investments New investment opportunities More room for investing in better technique
Structure of the Farm	The structure of the farm Esthetically more satisfying Stay in that location
Capital	Keep growing through increased value Be capable of interest rate payments
Generations	Show respect towards previous generations Respect towards siblings that stood back Manage what others have done
In Consistency with Values	Value the farm Agreeing with the family Conduct business in consistency with nature Keep the landscape open and populated
Lifestyle	Big part of life A lot of work
Succeed	Want to be number one One chance per generation

Values

Profitability	Improve the financial situation The value of the property increases Greater profitability Capacity to invest Economically manageable

Happiness	Having fun at work Enjoyable Excited about work Personal joy Fun and enthusiasm
Well-being	Feel well Satisfaction Feels good Personal development The social life
Safety	Safety in the future for the children Safety Safeguard the place Secure investment, reimburse the money
Survival	Continue farming Improve the situation of the business Competitive unit
Family	Safeguard the family Wants well for the children More time with the family
Future Generation	For the future generation Replenish the land (borrowed from our children)
Spare Time	Time to spare Value leisure Money to spare

Appendix 2 - Complete Data Set